Summary of the
National Database Ad Hoc Committee Meeting
July 30, 1997

The National Environmental Laboratory Accreditation Conference (NELAC) National Database Ad Hoc Committee met during the Third NELAC Annual Meeting at the Wyndham Anatole Hotel in Dallas, TX on Tuesday, July 30, 1997 from 9:00 am to noon. The meeting was led by its chair, Dr. Roger Carlson A list of action items is given in Attachment A. A list of Committee members is given in Attachment B. A copy of the agenda printed in the Meeting proceedings is given in Appendix C..

INTRODUCTION

Dr. Carlson introduced himself and the other committee member present. He noted that the cornerstone purpose of NELAC is to provide information on the status of accredited laboratories, information of PT providers, and information of accrediting authorities. He noted that the Committee is addressing operational issues of the database. The goal of today's discussion is to review an initial proposal and accept comment, and then to begin implementation based on this information. Dr. Carlson noted that, as usual, there will be many good ways to reach these objectives, and the committee is looking for the best compromise to fulfill both current needs and retain the necessary flexibility to address new needs. Hence the present goal is to anticipate and avoid any major mistake that would require subsequent redesign and restart of the system.

Dr. Carlson noted that the agenda for this session was to discuss major issues of structure, function, and operation of the NELAC database.

GOAL OF THE DATABASE

The initial goal is to establish a national electronic information resource which contains accurate and current information about all 1) NELAP-accredited environmental laboratories, 2) approved proficiency test providers, and 3) accreditation program officials of accrediting authorities as specified in the various chapters of the NELAC standards.

HARDWARE AND SOFTWARE -- SYSTEM CHOICES (see Item 1 of Agenda)

Present constraints include a timeframe of 1 year to operational status, with a startup budget of $50,000. Initial recommendations include use of a standard relational database database (e.g., Oracle) residing on an EPA server.

It was noted that the State accreditation programs will be responsible to enter & upload data to the National database. Hence, the ability to convert database files into the format finally needed for the National Database is considered essential. Several certification database implementation experiences were discussed.

Several participants agreed that communicating NELAC purposes and definitions to the

programmers responsible for designing and implementing a system will be a necessary and difficult task. It will be necessary to define and develop standards for communication, with a subsequently-designed prototype database: data structure must precede actual implementation. It was noted that there will need to be a careful systems analysis to guide system design. It was also noted that the analysis alone may cost more than is currently budgeted.

Database Engine Selection

Access or FoxPro may be desirable database engines, but they have not always proven straightforward to implement. Connecticut has updated a database using Microsoft Access, and recommends a small start on an expandable system. However, it was stated that Access is not a fully relational system, is believed to have security problems and may run quite slowly with large number of records..

Oracle was another option mentioned. If potential size of the database is above 2 million records, it is claimed that Oracle continues to work well. Experience in Oklahoma indicates implementation well within the proposed budget. However,frequent upgrades with "invisible bugs" was recounted by several participants; one participant mentioned that his State is considering moving away from Oracle for these reasons.

Datatreive was selected in New York following possible Oracle adoption after consideration of the time estimated to convert an existing database.

Informix is being used in Kansas on the basis of similar concerns as their relational database engine. It is an option judged to have the power of Oracle but to be less expensive overall.

Internet Web Use

It was noted that Arkansas is moving its database to an Internet home page. It was suggested to permit each state maintain its own database, with an appropritate linking strategy from a NELAC home page into each States' page. Present thought is to upload; could link directly into State's home page via hypertext links. The NELAC home page could list states having accrediting authority with links to their home pages. Issues to be considered are how far along States are in readily having this capability, and what would be the negative consequenses of such an approach.

A list of currently active Web sites of interest to this committee was supplied by several participants. It is included as Attachment D.

General Issues

Discussion included the following issues:

- what the lowest common denominator for access (by accrediting authorities and by general users to the National database will require;
- whether data "uploads" from the accrediting authorities to the National database should be in discrete blocks or a "real time" linkage;
- how EPA's current "information warehouse" strategy will impact the NELAC database;
- whether development should involve development of a prototype and subsequent planned migration to a system having expanded capabilities and capacities;
- whether initial implementation should be on a microcomputer with possible subsequent

migration to a server;

It was noted that Wisconsin is upgrading a database for 600 laboratories from a text-based system to a Windows-based system with costs in the range of $75-150K.

It was suggested that the NELAC database should be independent of any of the accrediting authority's systems.

Current issues appear to be of the structure of the database and the standardized information that is to be contained and made available.

There was a question of what could be offered by an accrediting authority in terms of the data elements and function. It was noted that Kansas currently has a website that could be reviewed as a possible prototype. It was also noted that New York has a homepage that could be considered in the design of the NELAC database.

DATA FORMAT (see Item 2)

Dr. Carlson noted that the committee has learned that the ANSI X12 electronic data interchange (EDI) standard is being considered by some EPA programs for use and that EDI workshops last fall by EPA were informative. Discussion of the standard ensued, with the significance being that this standard provides a standard protocol for data interchange in which the full data specifications and format information are embedded in the transferred file. Participants were aware of no other data interchange formats likely to be in common use for the foreseeable future.

OPERATIONAL ISSUES (see Item 3)

It appears that dial-in capabilities may be necessary at present, both for operational and security reasons. While Internet access is an increasingly viable option, there should be server-modem access provided in certain situations.

In all cases, the accrediting authorities will be responsible for data entry & maintanence of certain information. It was noted that New York has developed automated updates between databases in which transmittals occur on a scheduled basis.

It was noted that while much laboratory-related data will be supplied by accrediting authorities, there is still some data should be stored at a central location.

The potential linkage of the National database with the PT database being considered by NIST for use in the PT program was discussed. It was noted that these will be designed and maintained as two distinct databases, but with consideration of implementing any linkages as deemed necessary by NELAC.

In response to the proposal for update entries of 30 days for parameter certification and 60 days for other information, it was suggested that 30 day for all information would be appropriate in order to ensure that the database is current. It was agreed that this would apply to all information at all levels of database organization

PRIMARY DATA ELEMENTS (see Item 5)

It was agreed that there are conflicting perceived needs for data to be made available through the National database. At one extreme is the desire to have all data relative to each laboratory's accreditation application and status available. However, it was also noted that it is essential to ensure that such desires do not preclude keeping the database current. It was suggested that only data elements for accredited laboratories be retained in the database.

Additional issues discussed included:

- desired timeline (historical) on certification for analyte approval;
- amount of data to be retained on-line for use (e.g., 1 year, 2 years, etc) rather than data available by special request;
- identification of all primary and secondary accrediting authorities for a laboratory;
- identification of the users and their probable uses for the database;
- the possibility of only including commercial laboratories, (no "private" labs) as a means to diminish database requirements;
- retention of only Nationally important information in the database, leaving State-specific compliance information to be disseminated by the respective State;
- the need for a nationally recognized designation system for analytical methods, particularly anticipating implementation of PBMS by EPA in the near future;
- indication, for each field, of its most recent date of update;
- certified (available) vs registered (own facility)
- use of automated Email for suitable notification in critical cases (e.g., action by a primary accrediting authority communicated to secondary accrediting authorities);
- the use of "immediate" posting of status changes (rather than the 30 day recommendation made previously)
- consideration of how to deal with the possibility of having multiple accrediting authorities from one State;
- include "field of accreditation", including effective dates for each accrediting authority;
- perhaps also list a relevant technical contact phone number;
- include identification of assessor body(ies) used to gather information for the accreditation of each laboratory.

Since EPA frequently needs to develop information for trend analysis, there may be need to retain historical information; hence it may not be desirable to limitation to commercial labs.

NEXT MEETING

The next meeting of this committee will be scheduled for late Summer or early Fall to address the above issues and others that may be raised.

Attachment A

ACTION ITEMS
National Database Ad Hoc Committee Meeting
July 30, 1997

Item No.	Action	Date Completed
1		
2		
3		

Attachment B

LIST OF COMMITTEE MEMBERS/TELECONFERENCE PARTICIPANTS
National Database Ad Hoc Committee Meeting
July 30, 1997

Name	Affiliation	Phone/Fax/E-mail
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AGENDA
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1. Software
- Relational Manatement of character and numerical data
- Search and Sort capabilities
- Flexibility
- User Friendly
- Security as needed

Proposal: Oracle or Informix

2. Format
- Standardized
- Compatible with EPA water programs

Proposal: ANSI X12

3. Operating Characteristics
- Accessible through the Internet
- Accreditation data entered and maintained by authorized accrediting authority personnel
- All other usersgranted read-only access
- Parameter accreditation status entered within 30 days of effective date
- Other changed entered within 60 days of notification to the primary accrediting authority

4. Hardware
- Multi-user/multi-tasking server
- Maintained by EPA/contractor
- Communication linkages to the Internet

5. Primary Data Elements

A. Accredited Laboratories
- Laboratory Number
- Name of Laboratory
- Mailing address
- Physical address
- Laboratory Director
- Contact for Accreditation Issues
- Voice, FAX, and Internet numbers
- Identity of Accrediting Authority
- Laboratory description
- Field of testing
- Expiration data of accreditation

B. Authorized Proficiency Testing Providers
- Name of provider
- Address of provider
- Voice, FAX, Internet numbers
- NIST-approved parameters (field of accreditation?)

- Effective dates of authorization

C. Accrediting Authority Programs
- Name
- Address
- Voice, FAX, Internet numbers
- Name of Accreditation offiers (s)
- Administrative contact

WEB SITES OF INTEREST
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STATE	URL (Web Address)
Kansas	http://www.ink.org/public/kdhe/lab
Arkansas	call Dick Cassat at 501/682-0937 for current information
California	www.ca.gov
Wisconsin	http://www.dnr.state.wi.us/eq/lc
Florida	
New York	www.wasworth.org/labcert/elap.html